

REMARKS

This responds to the Office Action mailed on November 15, 2006.

No claims are amended, no claims are canceled, and no claims are added; as a result, claims 1-50 are now pending in this application. Applicant respectfully requests reconsideration of the above-identified application in view of the remarks that follow.

Comments on Response to Arguments

As discussed in M.P.E.P. § 2131, a “claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). “The identical invention must be shown in as complete detail as is contained in the ... claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). In addition, “[a]nticipation requires the presence in a single prior reference disclosure of each and every element of the claimed invention, *arranged as in the claim*.” *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984) (citing *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983)) (emphasis added).

According to M.P.E.P. § 2141, which cites *Hodosh v. Block Drug Co., Inc.*, 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986), the following tenets of patent law must be adhered to when applying 35 U.S.C. § 103. First, the claimed invention must be considered as a whole. Second, the references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination. Third, the references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention. Fourth, obviousness is determined using a reasonable expectation of success standard. Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. M.P.E.P. § 2141 (citing *Graham v. John Deere*, 383 U.S. 1, 148 USPQ 459 (1966)).

The Examiner has the burden under 35 U.S.C. § 103 to establish a *prima facie* case of obviousness. *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be

some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *M.P.E.P.* § 2142 (citing *In re Vaeck*, 947 F.2d, 488, 20 USPQ2d 1438 (Fed. Cir. 1991)).

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on Appellant's disclosure. *M.P.E.P.* § 2142 (citing *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)). The references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references. *M.P.E.P.* § 2142 (citing *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985)). In considering the disclosure of a reference, it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom. *M.P.E.P.* § 2144.01 (citing *In re Preda*, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968)). However, if the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *M.P.E.P.* § 2143.01 (citing *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)).

Claim 1 recites several features. First, claim 1 recites, in part, “inhibiting at least one feedback component of an input audio signal by adjusting a feedback-inhibiting filter.” Secondly, claim 1 recites, in part, “adjusting a feedback-inhibiting filter using a narrowband subaudible probe signal.” Applicant submits that the above sections of the MPEP indicate that an analysis of the patentability of a claim requires that the claim be considered as a whole.

In item 65 of the Office Action, it is stated that the “filter 120 of Kandel operates in a similar manner to the filter adjuster 124 and inhibiting filter 134 disclosed in the application, wherein the signal generated by the inhibiting filter 134 is subtracted from the input signal 102, which the signal from filter 120 of Kandel operated in a similar manner to be subtracted from the input 112. Therefore, Kandel meets the limitation disclosed in Claim 1.” Applicant disagrees, since there appears to be no teaching or suggestion that Kandel's filter 120 is adjusted. From

Kandel's Figure 4, there is one input to filter 120 that provides the signal that filter 120 operates on. Kandel appears to be void of an input or other mechanism to adjust filter 120. Further, an analysis based on a prior art that is structured or operates "in a similar manner" is not proper. The issue is whether taking the claim as a whole, the references teach all the elements of the claim as claimed. From the quote above, it appears that Kandel has been applied with respect to "inhibiting at least one feedback component of an input audio signal." However, the analysis provided in the Office Action does not demonstrate a teaching or suggestion in Kandel regarding "adjusting a feedback-inhibiting filter using a narrowband subaudible probe signal," as recited in claim 1. Applicant cannot find in Kandel a teaching or suggestion of a narrowband subaudible probe signal used to adjust an inhibiting filter. Support for claim 1 of the instant application may be seen in Applicant's Figure 1, where a narrowband subaudible probe signal may be used in conjunction with a filter adjuster 124 to adjust inhibiting filter 134.

In item 65, it is further stated that

Miller discloses the incoming program signal may be monitored for magnitude of a broadcast reference signal within an appropriate time window and/or compared to the frequency component magnitude before and/or after broadcast of the reference signal. Where the amplification system includes program material input from microphones, acoustic feedback of the broadcast reference signal can effect the overall transfer response. **Monitoring the incoming program signal for acoustic feedback of the reference signal in the program signal enables the automatic equalizer to make an appropriate adjustment when necessary.** The feedback eliminator 62 is a unit, circuit, or algorithm which eliminates unwanted acoustic feedback, sometimes called howl. An example of a suitable feedback eliminator is disclosed in U.S. Pat. No. 5,245,665. The feedback eliminator 62 monitors the program signal from the mixer 24, identifies any frequencies which become loud because of acoustic feedback, and attenuates identified howl frequencies to eliminate the acoustic feedback.

Applicant submits that "[m]onitoring the incoming program signal for acoustic feedback of the reference signal in the program signal enables the automatic equalizer to make an appropriate adjustment when necessary" does not teach or suggest adjusting feedback eliminator 62. Rather it teaches making appropriate adjustments to the signals that automatic equalizer outputs and on which feedback eliminator 62 operates. In the Office Action, it is also stated that "[i]t is implicit that the narrowband reference signals generated in automatic equalizer

is provided to the input of the feedback eliminator, as shown in Fig. 3.” Applicant respectfully submits that providing an input to a feedback eliminator does not disclose, teach, or suggestion adjusting the feedback eliminator.

In item 66 of the Office Action, Applicant is referred back to item 65 in reference to the application of Miller to claim 2. In item 65, it is also stated that “microphone 40 to pick up the audio program, wherein the signal form the microphone is utilizes to make adjustment in the automatic equalizer. See Fig. 1 and 3; column 6, line 29 to column 7, line 20; column 11, lines 12-37.” However, within this cited section, Miller recites at column 7, lines 5-8: “[t]he reference signal pickup 40 is located at the control center, or at a location near or in the audience, to enable accurate pickup of the audio program being received by the audience.” Miller also recites, at column 3, lines 53-60, “control 44 also responds to the detected reference signals and controls the multi-band gain control unit 32 to adjust the attenuation and/or amplification of individual frequency bands in the combined program and reference signal so that the audio program received by the reference pickup 40 has a desired tonal quality.” Thus, Applicant submits that the path to Miller’s pickup 40 is not a feedback path but rather the path from a speaker to Miller’s audience. Therefore, Applicant submits that Miller generates a reference signal along a direct, non-feedback path to determine tonal quality and does not disclose, teach, or suggest sending a subaudible narrowband signal into a filtered signal to form a probe signal to probe a feedback path as recited in claim 2.

In item 67 of the Office Action with respect to claim 8, it is stated that “Miller does discloses a system having a detector to detect undesired feedback in an input signal and a notch filter to filter a processed signal, wherein the notch filter provides a filtered signal and the processed signal is processed by processing the input signal, see Figs. 1 and 3-4; column 6, lines 30-61.” No further explanation is provided as to which are the elements in the cited section of Miller that the Examiner alleges teaches the elements of claim 8 of the instant application as recited in claim 8. As noted with respect to item 66, Applicant submits that Miller does not teach or suggest a probe generator to generate a probe signal to probe a feedback path with a narrowband subaudible audio probe signal.

In item 68 of the Office Action, several references are provided to allegedly support taking Official Notice “that it would have been obvious to one having ordinary skill in the art to

have the narrowband probe signal be subaudible in order to reduce undesired signals heard by the user.” Applicant traverses such use of Official Notice in the Office Action. Applicant submits that a feature being allegedly recited in a reference or several references does not make the feature well-known such that the feature may be deemed to be obvious by Official Notice. Further, Applicant submits that the occurrence of the alleged use of a subaudible signal in a reference other than a reference cited with respect to a rejection does not make obvious the use of a subaudible signal in the cited reference. Applicant submits that the Examiner has not properly combined one or more of the references, cited with respect to the Official Notice, with the primary reference in a rejection of claims in the instant application. To merely state a conclusory remark that a feature would have been obvious, without combining references, improperly circumvents the requirements stated in the M.P.E.P., as noted above, that the claimed invention must be considered as a whole, that the references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination, that the references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention, and that obviousness is determined using a reasonable expectation of success standard.

In addition, in item 68, it is stated that “the system of Finn operates in a similar manner to Applicant’s invention to suppression feedback of the input system.” Applicant submits that an analysis of patentability based on a prior art that is structured or operates “in a similar manner” is not proper. The issue is whether taking the claim as a whole, the references teach all the elements of the claim as claimed.

In item 69 of the Office Action, it is stated that “[i]t is implicit that the tone generator of Finn as modified generates a narrowband tone signal, therefore Finn as modified discloses using a narrowband tone signal.” As noted in item 68, Applicant maintains that the modification to Finn to alter a tone signal as proposed by the Examiner is not proper.

In item 70 of the Office Action with respect to claim 2, it is stated that “Finn as modified discloses tone generator which provides a narrowband tone signal, which it is implicit that the a narrowband tone signal has a first bandwidth, wherein the narrowband tone signal is send into a filtered signal, see Fig. 8. In addition, see argument above.” In item 70, the Examiner notes from Applicant’s previous reply: “Finn appears to remove detected feedback without probing the

feedback path. As a result of the void in Finn regarding probing a feedback path, Applicant submits that Finn does not form a probe signal to probe a feedback path and further that Finn does not teach or suggest forming a probe signal as recited in claim 2.” The Examiner has not addressed this aspect of Finn recited in item 70 in the Examiner’s Response to Arguments. In addition, as noted in items 68 and 69, Applicant maintains that the modification to Finn to alter a tone signal as proposed by the Examiner is not proper.

In item 71, the Examiner referenced *In re McLaughlin* 443 F.2d 1392, 1395, 170 USPQ 209, 212 (CCPA 1971), which recites “[a]ny judgement on obviousness is in a sense necessarily a reconstruction based on hindsight reasoning, but so long as it takes into account only knowledge which was within the level of ordinary skill in the art at the time the claimed invention was made and does not include knowledge gleaned only from applicant’s disclosure, such a reconstruction is proper.” Merely citing *In re McLaughlin* does not make the reconstruction analysis proper. There must be a basis, reference, or objective evidence provided to support the proposed modification of Finn. Since the proposed modifications to Finn were based on a statement of obviousness without a proper combination with other references to support the conclusory statement regarding a subaudible signal, Applicant submits that the applications of Finn to Finn as proposed in the Office Action can only be gleaned from use of Applicant’s disclosure. Therefore, such application of Finn to Finn is not proper.

In item 72 of the Office Action with respect to claim 8, the Applicant is referred to the argument above. As discussed with respect to items 68-71 above, application of Finn as proffered in the Office Actions of record does not teach or suggest the features of claim 8 of the instant application.

In item 73, the Examiner referenced *In re McLaughlin* 443 F.2d 1392, 1395, 170 USPQ 209, 212 (CCPA 1971), which recites “[a]ny judgement on obviousness is in a sense necessarily a reconstruction based on hindsight reasoning, but so long as it takes into account only knowledge which was within the level of ordinary skill in the art at the time the claimed invention was made and does not include knowledge gleaned only from applicant’s disclosure, such a reconstruction is proper.” Merely citing *In re McLaughlin* does not make the reconstruction analysis proper. There must be a basis, reference, or objective evidence provided to support the Examiner’s proposed modification of Finn. Since the proposed modifications to

Finn were based on a statement of obviousness without a proper combination with other references to support the conclusory statement regarding a subaudible signal, Applicant submits that the modifications of Finn as proposed in the Office Action can only be gleaned from use of Applicant's disclosure. Therefore, such application of Finn as proposed by the Examiner is not proper.

In item 74 of the Office Action, it is stated that "[i]t is implicit that the delta function, also referred to as unit impulse function of Stott is narrowband probe signal." However, Applicant submits that Stott does not teach or suggest a probe signal that is a delta function. Stott recites in paragraph [0022] and other sections "an auto-correlation function which is substantially a delta function." Applicant submits that an auto-correlation function being substantially a delta function does not *per se* teach or suggest that a signal having such an auto-correlation is a delta function or is narrowband. According to Stott at paragraphs [0133] and [134], "[i]n order for the auto-correlation function of the signal to be as close as possible to a delta function, $X(f)$ should be as flat as possible across the frequency spectrum," which indicates that the signal is broadband. Therefore, Applicant submits that Stott does not teach or suggest a narrowband signal as proposed by the Examiner.

Applicant respectfully submits that the above comments to the Response to Argument demonstrate that the claims of the instant application are patentable over the cited art of record.

First §102 Rejection of the Claims

Claim 1 was rejected under 35 U.S.C. § 102(b) for anticipation by Kandel et al. (US 6,353,671). Applicant traverses these grounds of rejection of these claims.

Applicant reserves the right to swear behind Kandel et al. (hereafter Kandel) at a later date.

Applicant cannot find in Kandel a disclosure, a teaching, or a suggestion of a method including adjusting a feedback-inhibiting filter using a narrowband subaudible probe signal as recited in claim 1. In the Office Action, it is stated that "Kandel discloses ... adjusting a feedback-inhibiting filter (Fig. 4; column 5, line 57 to column 6, line 5; column 9, lines 50-57) using a narrowband subaudible probe signal (Fig. 4; column 6, lines 19-24; column 10, lines 12-25; column 12, lines 1-4)." Applicant respectfully disagrees with this analysis. Applicant submits

that a signal input to a filter that then provides a modified version of that signal does not disclose, teach, or suggest using a signal to adjust the filter itself. From Kandel's Figure 4, injected tone T is operated on by filter 120 to produce the "negative feedback" signal, that is, filter 120 operates on T to produce the "negative feedback" signal, which does not suggest that injected tone T adjusts filter 120. Therefore, Applicant cannot find in Kandel a disclosure, a teaching, or a suggestion of a method that includes adjusting a filter using a signal having the features recited in claim 1.

Thus, Applicant submits that Kandel does not teach each and every claim element of claim 1 and that Kandel does not teach the identical invention in as complete detail as is contained in claim 1. Thus, Applicant submits that Kandel does not anticipate claim 1 and that claim 1 is patentable over Kandel for at least the reasons stated above.

Applicant respectfully requests withdrawal of these rejections of claim 1, and reconsideration and allowance of this claim.

Second §102 Rejection of the Claims

Claims 1-2, 5-15, 17-18, 20, 22, 25, 28-29, 34, 36 and 40 were rejected under 35 U.S.C. § 102(b) for anticipation by Miller et al. (US 5,506,910). Applicant traverses these grounds of rejection of these claims.

Applicant cannot find in Miller a disclosure, a teaching, or a suggestion of a method in which a feedback-inhibiting filter is adjusted using a narrowband subaudible probe signal, as recited in claim 1. In the Office Action, it is stated that "Miller discloses a method of processing audio signals, comprising inhibiting at least one feedback component of an input audio signal by adjusting a feed back-inhibiting filter (Fig. 3; column 7, lines 9-19) using a narrowband subaudible probe signal (Fig. 1; column 4, line 64 to column 5, line 35)." Regarding Figure 3 at column 7, lines, 12-16, Miller recites:

The feedback eliminator **62** monitors the program signal from the mixer **24**, identifies any frequencies which become loud because of acoustic feedback, and attenuates identified howl frequencies to eliminate the acoustic feedback.

Applicant cannot find in Miller a teaching or suggest that feedback eliminator **62** is adjusted using a signal. Applicant submits that a filter or "feedback eliminator" operating on a signal

does not disclose, teach, or suggest a signal adjusting a filter. Therefore, Applicant submits that Miller does not teach each and every claim element of claim 1 and that Miller does not teach the identical invention in as complete detail as is contained in claim 1. Thus, Applicant submits that Miller does not anticipate claim 1 and that claim 1 is patentable over Miller for at least the reasons stated above.

Applicant cannot find in Miller a disclosure, a teaching, or a suggestion of a method that includes forming a probe signal to probe a feedback path, as recited in claim 2. In the Office Action, it is stated that “Miller discloses a method of processing at least one audio signal comprising: filtering a processed signal by a notch filter to form a filtered signal (Fig. 1; column 4, lines 47-63); and sending a subaudible narrowband signal having a first bandwidth into the filter signal to form a probe signal to probe a feedback path having a second bandwidth (Fig. 1; column 4, line 64 to column 5, line 35).” Applicant disagrees. From Miller’s Figure 1, Applicant submits that Miller does not disclose, teach, or suggest probing a feedback path. Miller has “inputs from one or more program signal generators such as musical instrument 26, microphone 28, and/or recorded material player 30” and audio pickup at “reference microphone 40” (*See, Miller, Figure 1 and column 3, lines 38-49*). As shown in Miller’s Figure 1, Miller’s system is applied to the signal received at “reference microphone 40.” Since “reference microphone 40” is different from “musical instrument 26, microphone 28, and/or recorded material player 30,” Applicant submits that a test signal at the input to “reference microphone 40” is not a probe of a feedback path. Therefore, Applicant submits that Miller does not disclose, teach, or suggest sending a subaudible narrowband signal into a filtered signal to form a probe signal to probe a feedback path as recited in claim 2. Thus, Applicant submits that Miller does not teach each and every claim element of claim 2 and that Miller does not teach the identical invention in as complete detail as is contained in claim 2. Thus, Applicant submits that Miller does not anticipate claim 2 and that claim 2 is patentable over Miller for at least the reasons stated herein.

Claims 5-7 depend on claim 2. Applicant submits that claims 5-7 are over Miller for at least the reasons stated with respect to claim 2.

Applicant cannot find in Miller a disclosure, a teaching, or a suggestion of a system having a detector to detect undesired feedback in an input signal and a notch filter to filter a

processed signal, wherein the notch filter provides a filtered signal and the processed signal is provided by processing the input signal, as recited in claim 8. In the Office Action, it is stated that

Regarding Claim 8, Miller discloses a system for enhancing audio signals, the system comprising;
at least one detector to detect undesired feedback in an input signal (Fig. 1; column 3, lines 32-60);
at least one notch filter to filter a processed signal, wherein the at least one notch filter provides a filtered signal (Fig. 1; column 4, lines 47-63) and the processed signal is provided by processing the input signal (Fig. 1); and
at least one probe generator to generate a probe signal, the probe signal and the filtered signal used to probe a feedback path with a narrowband subaudible audio probe signal (Fig. 1; column 4, line 64 to column 5, line 35).

From Miller's Figure 1, "sine wave detector 42" has an input from "microphone 40" and "narrow band reject filter 21" has an input processed from "musical instrument 26, microphone 28, and/or recorded material player 30." From Miller's Figure 1, the input related to detector 42 is different from the input related to filter 21. In contrast, the recited detector and notch filter are related to the same input as recited in claim 8.

In addition, as noted above with respect to claim 2, Miller does not teach or suggest forming a probe signal to probe a feedback path. Therefore, Applicant submits that Miller does not disclose, teach, or suggest a system including at least one probe generator to generate a probe signal such the probe signal and a filtered signal provide a probe signal to probe a feedback path with a narrowband subaudible audio probe signal, as recited in claim 8. As noted in the Comments to Response to Arguments, Applicant submits that Miller involves a path to Miller's pickup 40 in which the path is not a feedback path but rather the path from a speaker to Miller's audience. Thus, Applicant submits that the features of Miller's system are not configured as the features recited in claim 8 of the instant application. Hence, Miller does not disclose the presence of each and every element of the claim 8 as arranged as in claim 8. Thus, Applicant submits that Miller does not anticipate claim 8 and that claim 8 is patentable over Miller for at least the reasons stated herein.

Claims 9-15, 17-18, 20, and 22 depend on claim 8. Applicant submits that claims 9-15, 17-18, 20, and 22 are over Miller for at least the reasons stated with respect to claim 8.

In the Office Action, it is stated that "[c]laim 25 is essentially similar to Claim 8 and is

rejected for the reasons stated above apropos to Claim 8 (Fig. 1; column 4, line 64 to column 5, line 35).” However, the Examiner has not addressed the features recited in claim 25 that are not recited in claim 8. Applicant submits that claim 25 is patentable over Miller for at least the reasons stated herein. Claims 28, 29, and 34 depend on claim 25. Applicant submits that claims 28, 29, and 34 are patentable over Miller for at least the reasons discussed with respect to claim 25.

In the Office Action, it is stated that “[c]laim 36 is essentially similar to Claims 8, 22, and 25 and is rejected for the reasons stated above apropos to Claim 8, 22, and 25.” However, the Examiner has not addressed the features recited in claim 36 that are not recited in claims 8, 22, and 25. Based on the Examiner’s statement, it is clear that claim 36 is patentable over Miller for at least the reasons stated herein with respect to claims 8, 22, and 25. Applicant submits that claim 36 is therefore patentable over Miller for at least the reasons stated herein.

Claim 40 depends on claim 8. Applicant submits that claim 40 is patentable over Miller for at least the reasons stated with respect to claim 8.

Applicant respectfully requests withdrawal of these rejections of claims 1-2, 5-15, 17-18, 20, 22, 25, 28-29, 34, 36 and 40, and reconsideration and allowance of these claims.

First §103 Rejection of the Claims

Claims 1-7 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Finn et al. (US 6,496,581). Applicant traverses these grounds of rejection of these claims.

Applicant reserves the right to swear behind Finn et al. (hereafter Finn) at a later date.

Applicant transveres the taking of Official Notice that it would have been obvious to one having ordinary skill in the art to have the narrowband probe signal be subaudible in order to reduce undesired signals heard by the user for least the reasons discussed in the Comments on the Response to Arguments.

Applicant cannot find in Finn, as proffered in the Office Action, a teaching or a suggestion of a method that includes inhibiting at least one feedback component of an input audio signal by adjusting a feedback-inhibiting filter using a narrowband subaudible probe signal as recited in claim 1. In the Office Action, it is stated that “Finn does not expressly the narrowband probe signal being subaudible.” Applicant respectfully submits that the assertion of

Official Notice with respect to a subaudible signal as applied to the claims of the instant application does not properly establish a *prima facie* case of obviousness. Therefore, Applicant submits that Finn does not teach or suggest using a narrowband subaudible signal as recited in claim 1. Thus, Applicant submits that Finn does not teach or suggest all the elements of claim 1 and that claim 1 is patentable over Finn.

Applicant cannot find in Finn, as proffered in the Office Action, a teaching or a suggestion of a method that includes sending a subaudible narrowband signal having a first bandwidth into a filtered signal to form a probe signal to probe a feedback path as recited in claim 2. In addition to the lack of teaching or suggestion in Finn with respect to a subaudible narrowband signal, Applicant cannot find a teaching or a suggestion in Finn with respect to forming a probe signal to probe a feedback path. In Figure 8, the feedback detector provides input to tone generator 400, where the output of tone generator 400 is provided to model 402, whose output is summed with signals from other models to remove tonal feedback noise to prevent broadcast of the tonal noise by the loudspeaker 34. Finn appears to remove detected feedback without probing the feedback path. As a result of the void in Finn regarding probing a feedback path, Applicant submits that Finn does not form a probe signal to probe a feedback path and further that Finn does not teach or suggest forming a probe signal as recited in claim 2.

Further with respect to claim 2 in the Office Action, it is stated that “it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify Finn with the teaching of Finn to incorporate an acoustic feedback tonal canceler in order to removing tonal noise from the output of the microphone to prevent broadcast thereof by a remote but acoustically coupled loudspeaker.” Applicant respectfully traverses the application of Finn to Finn as proffered in the Office Action. It is noted that “[a]ny judgement on obviousness is in a sense necessarily a reconstruction based on hindsight reasoning, but so long as it takes into account only knowledge which was within the level of ordinary skill in the art at the time the claimed invention was made and does not include knowledge gleaned only from applicant’s disclosure, such a reconstruction is proper.” *In re McLaughlin* 443 F.2d 1392, 1395, 170 USPQ 209, 212 (CCPA 1971). There is no basis, reference, or objective evidence provided in the Office Action to support the proposed modification of Finn. Applicant submits that the application of Finn to Finn as proposed in the Office Action can only be gleaned from use of

Applicant's disclosure. Therefore, such application of Finn to Finn is not proper.

For at least the reasons stated above, Applicant submits that Finn does not teach or suggest all the elements of claim 2 and that claim 2 is patentable over Finn. Claims 3-7 depend from claim 2. Applicant submits that claims 3-7 are patentable over Finn for at least the reasons stated with respect to claim 2.

Applicant respectfully requests withdrawal of these rejections of claim 1-7, and reconsideration and allowance of these claims.

Second §103 Rejection of the Claims

Claims 8-23, 25, 28-29, 34, 36, and 40 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Finn in view of Seki et al. (US 5,677,987). Applicant traverses these grounds of rejection of these claims.

Applicant cannot find in the combination of Finn and Seki et al. (hereafter Seki), as proffered in the Office Action, a teaching or a suggestion of a system that includes a probe generator to generate a probe signal such the system is configured to use the probe signal and a filtered signal to probe a feedback path with a narrowband subaudible audio probe signal, as recited in claim 8. In the Office Action, it is stated that "Finn does not expressly disclose at least one probe generator to generate a probe signal and the filtered signal used to probe a feedback path with a narrowband audio probe signal." Applicant submits that not only does Finn fail to disclose a system configured to "probe a feedback path with a narrowband audio probe signal," but Finn is void of a teaching of a system configured to probe a feedback path with a signal. Applicant cannot find a teaching or a suggestion in Finn with respect to forming a probe signal to probe a feedback path. In Figure 8, the feedback detector provides input to tone generator 400, where the output of tone generator 400 is provided to model 402, whose output is summed with signals from other models to remove tonal feedback noise to prevent broadcast of the tonal noise by the loudspeaker 34. Finn appears to remove detected feedback without probing the feedback path. Also in Figure 7, Finn appears to remove detected feedback without probing the feedback path. In the Office Action, Seki is cited with respect to a "compressor/limiter" to process an input signal. Applicant submits that the teaching of Seki regarding a "compressor/limiter" does not cure the abovementioned deficiencies of applying Finn to claim 8.

Thus, Applicant submits that the combination of Finn and Seki does not teach or disclose a system configured to probe a feedback path with a signal as recited in claim 8.

Further with respect to claim 8 in the Office Action, it is stated that “it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify Finn with the teaching of Finn to incorporate an acoustic feedback tonal canceler in order to removing tonal noise from the output of the microphone to prevent broadcast thereof by a remote but acoustically coupled loudspeaker.” Applicant respectfully traverses the application of Finn to Finn as proffered in the Office Action. It is noted that “[a]ny judgement on obviousness is in a sense necessarily a reconstruction based on hindsight reasoning, but so long as it takes into account only knowledge which was within the level of ordinary skill in the art at the time the claimed invention was made and does not include knowledge gleaned only from applicant’s disclosure, such a reconstruction is proper.” *In re McLaughlin* 443 F.2d 1392, 1395, 170 USPQ 209, 212 (CCPA 1971). There is no basis, reference, or objective evidence provided in the Office Action to support the proposed modification of Finn. Applicant submits that the application of Finn to Finn as proposed in the Office Action can only be gleaned from use of Applicant’s disclosure. Therefore, such application of Finn to Finn is not proper. The combination of Seki with Finn as proffered in the Office Action does not cure these deficiencies of applying Finn to claim 8.

In the Office Action, it is stated that “Finn does not expressly the narrowband probe signal being subaudible.” Further, in the Office Action, it is stated that “the Examiner takes Official Notice that it would have been obvious to one having ordinary skill in the art to have the narrowband probe signal be subaudible in order to reduce undesired signals heard by the user.” Applicant respectfully traverses the assertion of Official Notice. Finn relates to apparatus to remove undesired signals prior to input to a speaker. *See Finn column 14, lines 50-53 and column 15, lines 17-19.* If Finn teaches that his apparatus removes undesired signals prior to input to a speaker, then the user will not hear such undesired signals. Thus, there is no basis provided in Finn or in the Office Action for the Official Notice. The combination of Seki with Finn, as proffered in the Office Action, does not cure these deficiencies of applying Finn to claim 8.

With respect to claim 19, it stated that “the Examiner take Official Notice that it would

have been obvious to provide a switch to turn on/off the feedback reduction or switch between normal mode and feedback reduction when the detector determines that it is not necessary for feedback reduction which will remove the notch filter and sine wave or multiple sine waves (i.e. probe signal) from the communication channel when the channel is turned off or in normal mode in order to reduce processing to occur when it is not necessary.” Applicant traverses the taking of Official Notice since no reference or objective evidence has been provided for such Official Notice.

For at least the reasons stated above, Applicant submits that Finn in view of Seki does not teach or suggest all the elements of claim 8 and that claim 8 is patentable over Finn in view of Seki. Claims 9-23 and 40 depend from claim 8. Applicant submits that claims 9-23 and 40 are patentable over Finn in view of Seki for at least the reasons stated with respect to claim 8.

In the Office Action, it is stated that “[c]laim 25 is essentially similar to Claim 8 and is rejected for the reasons stated above apropos to Claim 8 (Figs. 7 and 8; column 15, lines 4-36).” Independent claim 25 includes all the features of 8 and additional features that have not been discussed in the Office Action or in Finn column 15, lines 4-36. Applicant submits that claim 25 is therefore patentable over Finn in view of Seki for at least the reasons stated herein.

Claims 28, 29, and 34 depend on claim 25. Applicant submits that claims 28, 29, and 34 are patentable over Finn in view of Seki for at least the reasons discussed with respect to claim 25.

In the Office Action, it is stated that “[c]laim 36 is essentially similar to Claims 8, 22, and 25 and is rejected for the reasons stated above apropos to Claim 8, 22, and 25.” Based on the Examiner’s statement, it is clear that claim 36 is patentable over Finn in view of Seki for at least the reasons stated herein with respect to claims 8, 22, and 25. Further, similar to the analysis of claim 25 in the Office Action, the features of claim 36 have not been discussed in the Office Action. Applicant submits that claim 36 is therefore patentable over Finn in view of Seki for at least the reasons stated herein.

Applicant respectfully requests withdrawal of these rejections of claims 8-23, 25, 28-29, 34, 36, and 40, and reconsideration and allowance of these claims.

Third §103 Rejection of the Claims

Claim 1 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Stott et al. (US 20020044667). Applicant traverses these grounds of rejection of these claims.

Applicant reserves the right to swear behind Stott et al. (hereafter Stott) at a later date.

Applicant transverses the taking of Official Notice that it would have been obvious to one having ordinary skill in the art to have the narrowband probe signal be subaudible in order to reduce undesired signals heard by the user for least the reasons discussed in the Comments on the Response to Arguments.

Applicant cannot find in Stott a teaching or a suggestion of a narrowband probe signal. In the Office Action, the abstract is referenced with respect to a narrowband probe signal. In the Stott Abstract, it is stated that “[t]he signal having an auto-correlation function which is substantially a delta function may be an added noise signal (70).” However, Applicant submits that Stott does not teach or suggest a probe signal that is a delta function. Stott recites in the Abstract, paragraph [0022], and other sections “an auto-correlation function which is substantially a delta function.” Applicant submits that an auto-correlation function being substantially a delta function does not teach or suggest that a signal having such an auto-correlation is a delta function or is narrowband. According to Stott at paragraphs [0133] and [134], “[i]n order for the auto-correlation function of the signal to be as close as possible to a delta function, $X(f)$ should be as flat as possible across the frequency spectrum,” which indicates that the signal is broadband. Therefore, Applicant submits that Stott does not teach or suggest a narrowband signal as proposed by the Examiner.

Applicant respectfully requests withdrawal of these rejections of claim 1, and reconsideration and allowance of this claim.

First Allowable Subject Matter

Claims 26-27, 30-33, 35, 37-39, and 46 were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant submits that claims 26-27, 30-33, 35, 37-39, and 46 depend from allowable claims. Therefore, Applicant submits that claims 26-27, 30-33, 35, 37-39, and 46 are patentable

for at least the reasons stated herein.

Applicant respectfully requests withdrawal of these objections of claims 26-27, 30-33, 35, 37-39, and 46, and reconsideration and allowance of these claims.

Second Allowable Subject Matter

Claims 24, 41-45 and 47-50 were allowed. Applicant acknowledges allowance of claims 24, 41-45 and 47-50.

Reservation of Rights

Applicant does not agree with one or more comments in the instant Office Action. However, Applicant has limited the discussion of the traversal of the Office Action rejections to such discussion as is necessary to efficiently expedite the prosecution of the abovementioned application. Thus, in the interest of clarity and brevity, Applicant may not have addressed every assertion made in the Office Action. Applicant's silence regarding any such assertion does not constitute any admission or acquiescence. Applicant reserves all rights not exercised in connection with this response, such as the right to challenge or rebut any tacit or explicit characterization of any reference or of any of the present claims, the right to challenge or rebut any asserted factual or legal basis of any of the rejections, the right to swear behind any cited reference such as provided under 37 C.F.R. § 1.131 or otherwise, or the right to assert co-ownership of any cited reference. To the extent that any rejection or assertion is based upon the Examiner's personal knowledge, rather than any objective evidence of record as manifested by a cited prior art reference, Applicant timely objects to such reliance on Official Notice, and reserves all rights to request that the Examiner provide a properly applied reference or affidavit in support of such assertion, as required by MPEP § 2144.03. Applicant reserves all rights to pursue any cancelled claims in a subsequent patent application claiming the benefit of priority of the present patent application, and to request rejoinder of any withdrawn claim, as required by MPEP § 821.04.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney (612) 371-2157 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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Date 16 January 2007

By David R. Cochran
David R. Cochran
Reg. No. 46,632

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 16th day of January, 2007.

DAVID R. COCHRAN

Name

David R. Cochran
Signature